



SECTION

14.3

POPULATION DENSITY AND DISTRIBUTION

Reinforcement

**KEY CONCEPT** Each population has a density, a dispersion, and a reproductive strategy.

Recall that a population is a group of the same species living in the same area. A population can be measured in many ways. One way is by its density. **Population density** is a measure of the number of individuals living in a defined area. Population density is measured by creating a ratio of individuals that live in a particular area to the size of that particular area. The formula for population density is

$$\text{\# of individuals} / \text{area (units}^2\text{)} = \text{population density}$$

For example, if there are 50 deer living in an area of 10 km<sup>2</sup>, the population density would be 5 deer per km<sup>2</sup>.

A population can also have a dispersion pattern. **Population dispersion** is how the individuals of a population are spread out in a specific area. There are three types of population dispersion patterns:

- Clumped dispersion shows that individuals live close together in groups or packs. This type of dispersion may help with hunting and feeding, as well as protection from predators.
- Uniform dispersion may indicate that individuals are territorial and compete for limited resources by living at specific distances from one another.
- Random dispersion shows no distinct pattern within a specific area.

The reproductive strategies for a population are illustrated through survivorship curves. **Survivorship curves** illustrate the number of individuals in a population surviving over time.

1. What is population density?

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2. Calculate the population density for a group of 30 birds that live in an area of 3 km<sup>2</sup>.

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3. What are the three types of population dispersion patterns and what are the characteristics of each population?

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